

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

#11
H. McGhee
8-1-02
COPY OF PAPERS
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In re Patent Application of:
FLICK

Serial No. 09/650,425

Filing Date: AUGUST 29, 2000

For: **VEHICLE SECURITY SYSTEM SHOCK
SENSING SIREN AND ASSOCIATED
METHODS**

Examiner: B. SWARTHOUT

Art Unit: 2632

Attorney Docket No. 58072

APPELLANT'S APPEAL BRIEF

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JUL 16 2002

Technology Center 2600

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith is Appellant's Appeal Brief (in triplicate) together with the requisite \$160.00 fee for filing a brief. If any additional extension and/or fee is required, authorization is given to charge Deposit Account No. 01-0484.

I. TABLE OF CITED AUTHORITY

In re Arne V. Larson, 340 F.2d 965, 144 USPQ 347 (CCPA 1965). See attached Appendix.

(1) REAL PARTY IN INTEREST

The real party in interest for the present application is the Applicant, Kenneth E. Flick.

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the present application.

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(3) STATUS OF CLAIMS

All of Claims 1-30 pending in the present application and all are rejected. Accordingly, all of Claims 1-30 are the subject of this appeal.

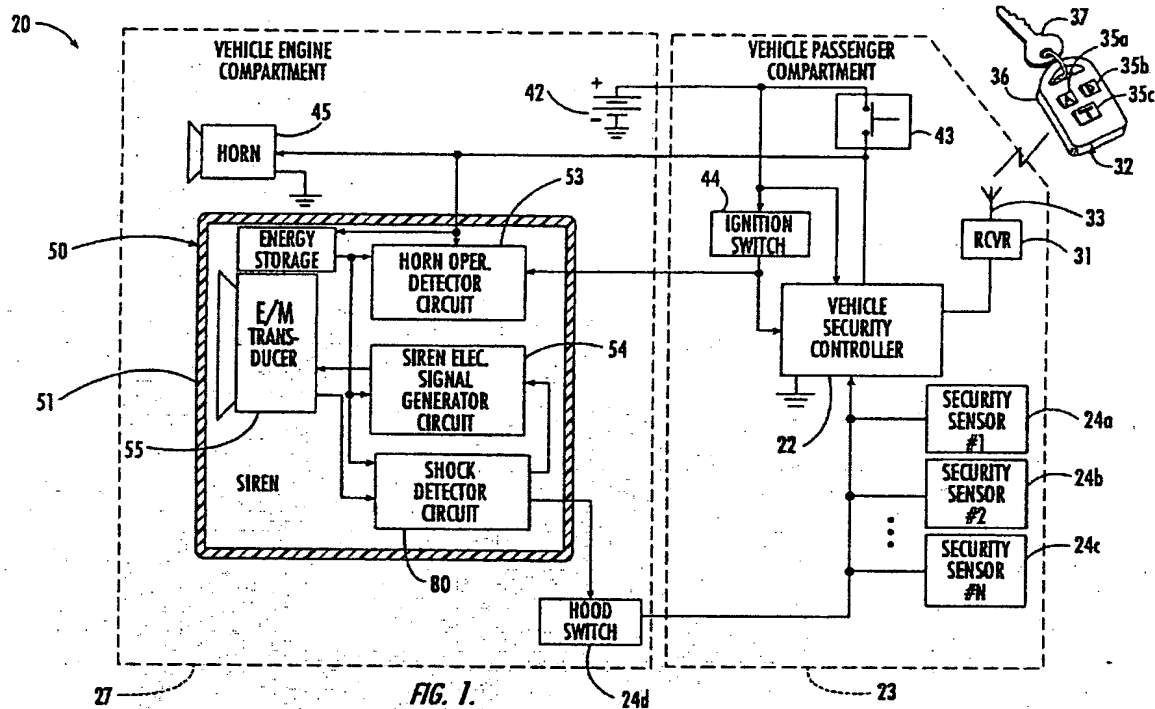
(4) STATUS OF AMENDMENTS

An Amendment After Final filed April 30, 2002 was entered upon filing this appeal as indicated in the Advisory Action dated May 28, 2002. Accordingly, the claims in the Appendix incorporate the Amendment After Final and all prior amendments.

(5) CONCISE SUMMARY OF THE INVENTION

The present invention is directed to a vehicle security system shock sensing siren and methods. As illustrated below in FIG. 1 for example, the vehicle security system 20 comprises at least one security sensor 24a-24d and a security controller 22 connected thereto. As further described on pages 6-10 of the specification, the vehicle security system 20 also includes a siren 50 comprising a housing 51 and a siren electrical signal generator circuit 54 carried by the housing for generating an electrical siren security alarm signal responsive to the security controller 22. The siren 50 also comprises a shock detector circuit 80 carried by the housing 51 for processing an electrical shock sense signal for the security controller 22, and an electrical/mechanical (E/M) transducer 55 carried by the housing for sounding a siren security alarm responsive to the electrical siren security alarm signal.

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As further illustrated above in FIG. 1, and as disclosed on page 13, lines 14-17 of Applicant's specification, combining the transducer 55, the siren electrical signal generator circuit 54, and the shock sensor components 80, for example, into the common housing 51, advantageously provides a compact, portable and readily installed device which can be used alone or added to upgrade an existing vehicle security system. In addition, the siren may be readily retrofitted to an existing vehicle security system with only a few simple electrical connections made within the engine compartment, as disclosed on page 9, lines 26-32 of Applicant's specification. The present invention therefore advantageously eliminates the need to piecemeal several different components to achieve a vehicle security system having the above-referenced elements.

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(6) ISSUES

The issue presented on appeal is whether Claims 1-30 are patentable under 35 U.S.C. § 103 over the Mueller et al. patent (U.S. Patent No. 6,140,914).

(7) GROUPING OF CLAIMS

For the purposes of addressing the rejection under 35 U.S.C. § 103, Claims 1-30 are grouped together.

(8) ARGUMENT

I. The Rejection

The Examiner rejected all of the claims of the present application over the Mueller et al. patent. To briefly summarize the Examiner's position, the Examiner contends that the Mueller et al. patent teaches the components of the present invention, but does not disclose the use of a housing. The Examiner further contends that choosing to house the components for protection against environmental factors would have been obvious.

II. Claims 1-30 Are Patentable

As illustrated below, the Mueller et al. patent discloses a vehicle security system including a plurality of spaced-apart discrete components. In particular, the Mueller et al. patent discloses a first siren 33 under the hood of the vehicle 12 and a second siren 81 at the rear window area of the vehicle. A shock sensor 64 is installed within the passenger compartment of the vehicle 12. Mueller et al. in FIGS. 9 and 10 also illustrates two embodiments of shock sensors 64, 64', each being self-contained within a respective housing 226, 232 without any additional components therein. Similarly, FIGS. 17 and 18 illustrate a conventional siren 450 including its own housing

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452, which is separate from the respective housings of the shock sensors 64, 64'.

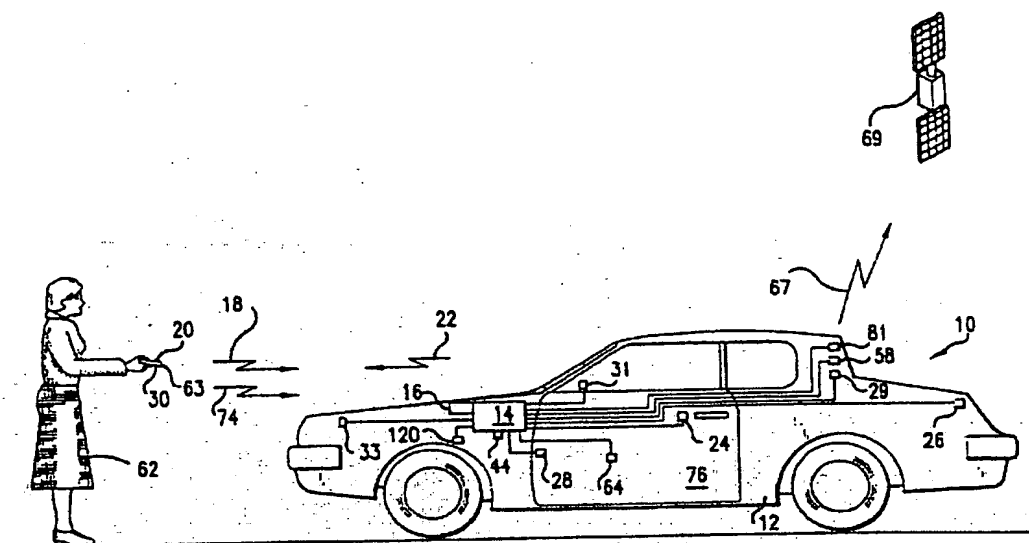


FIG.1

***** MUELLER ET AL. *****

The Examiner is correct to note that the Mueller et al. patent does not disclose the siren comprising a housing and other components, including the shock sensing circuitry, contained within the housing as in the claimed invention. The Examiner contends, however, that because Mueller et al. discloses a housing for the receiver/controller, it would have been obvious to house other components of the system to protect them from damage due to environmental factors such as moisture, rocks, tar, etc.

The Examiner cites the 1965 CCPA case of *In re Larson* and contends that making separate known devices integral in a housing is obvious to one of ordinary skill in the art. Applicant submits, however, that the Examiner has

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mischaracterized *Larson* and further asserts that the case does not deal with positioning devices in a housing, but rather merely deals with a manner of connecting components.

It is respectfully asserted that not only does the Mueller et al. patent fail to render the claimed invention obvious, but indeed it teaches away from the claimed invention. The Mueller et al. patent discloses the shock sensor and siren devices being discrete and widely spaced apart in the vehicle. Separate respective housings are provided for the siren and shock sensor. There is simply no fair teaching or suggestion in the Mueller et al. patent or any other prior art reference to disregard the clear teachings of the Mueller et al. patent in an attempt to produce the claimed invention. It appears that the Examiner is attempting to use impermissible hindsight reconstruction to modify the Mueller et al. patent where indeed the reference teaches away from the claimed invention.

Accordingly, it is submitted that independent Claim 1 is patentable over the prior art. Claims 11, 19 and 25 are similar to independent Claim 1 and are also patentable. In view of the patentability of the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing features are also patentable. Accordingly, these dependent claims require no further discussion herein.

CONCLUSIONS

In view of the arguments provided herein, it is submitted that all the claims, namely Claims 1-30 are patentable

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over the prior art. Accordingly, Applicant respectfully requests that all of the rejections be reversed.

Respectfully submitted,



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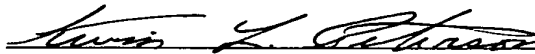
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231, on this 28th day of June, 2002.



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Serial No. 09/650,425
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APPENDIX INCLUDING THE CLAIMS ON APPEAL
FOR U.S. PATENT APPLICATION SERIAL NO. 09/650,425

1. A vehicle security system comprising:
at least one security sensor and a security controller
connected thereto;

a siren comprising

a housing,

a siren electrical signal generator circuit carried by
said housing for generating an electrical siren security
alarm signal responsive to said security controller,

a shock detector circuit carried by said housing for
processing an electrical shock sense signal for said
security controller, and

an electrical/mechanical (E/M) transducer carried by
said housing for sounding a siren security alarm responsive
to the electrical siren security alarm signal, and for
generating the electrical shock sense signal responsive to
mechanical shock.

2. A vehicle security system according to Claim 1
wherein the vehicle includes an ignition switchable between ON
and OFF positions; and wherein said siren is operable responsive
to the ignition being in the OFF position and is not operable
responsive to the ignition being in the ON position.

3. A vehicle security system according to Claim 1
wherein said security controller is switchable between an armed
mode for causing said siren to generate the siren security alarm
responsive to said at least one security sensor, and a disarmed
mode.

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4. A vehicle security system according to Claim 3 wherein said at least one vehicle security sensor comprises a hood switch; and wherein said shock detector is operatively coupled to said security controller through said hood switch.

5. A vehicle security device according to Claim 1 wherein said shock detecting circuit generates a first output based upon detecting a shock within a first intensity range, and generates a second output based upon detecting a shock within a second intensity range.

6. A vehicle security device according to Claim 5 wherein the first intensity range is less than the second intensity range; and wherein the first output causes a reduced siren security alarm and the second output causes a full siren security alarm.

7. A vehicle security device according to Claim 1 wherein said E/M transducer comprises a loudspeaker.

8. A vehicle security system according to Claim 1 wherein said housing is for mounting within a vehicle engine compartment.

9. A vehicle security system according to Claim 1 further comprising a receiver connected to said security controller, and at least one remote transmitter communicating with said receiver.

10. A vehicle security system according to Claim 9 wherein said receiver and said at least one remote transmitter operate with changing codes.

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11. A siren for operation with a vehicle security system comprising at least one security sensor and a security controller connected thereto, the siren comprising:

a housing;

a siren electrical signal generator circuit carried by said housing for generating an electrical siren security alarm signal responsive to the security controller;

a shock detector circuit carried by said housing for processing an electrical shock sense signal for the security controller; and

an electrical/mechanical (E/M) transducer carried by said housing for sounding a siren security alarm responsive to the electrical siren security alarm signal, and for generating the electrical shock sense signal responsive to mechanical shock.

12. A siren according to Claim 11 wherein the vehicle includes an ignition switchable between ON and OFF positions; and wherein said siren is operable responsive to the ignition being in the OFF position and is not operable responsive to the ignition being in the ON position.

13. A siren according to Claim 11 wherein the security controller is switchable between an armed mode for causing said siren to generate the siren security alarm responsive to said at least one security sensor, and a disarmed mode.

14. A siren according to Claim 13 wherein the at least one vehicle security sensor comprises a hood switch; and wherein said shock detector is operatively coupled to the security controller through the hood switch.

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15. A siren according to Claim 11 wherein said shock detecting circuit generates a first output based upon detecting a shock within a first intensity range, and generates a second output based upon detecting a shock within a second intensity range.

16. A siren according to Claim 15 wherein the first intensity range is less than the second intensity range; and wherein the first output causes a reduced siren security alarm and the second output causes a full siren security alarm.

17. A siren according to Claim 11 wherein said E/M transducer comprises a loudspeaker.

18. A siren according to Claim 11 wherein said housing is for mounting within a vehicle engine compartment.

19. A siren comprising:

a housing;

a siren electrical signal generator circuit carried by said housing for generating an electrical siren security alarm signal;

a shock detector circuit carried by said housing for processing an electrical shock sense signal; and

an electrical/mechanical (E/M) transducer carried by said housing for sounding a siren security alarm responsive to the electrical siren security alarm signal, and for generating the electrical shock sense signal responsive to mechanical shock.

20. (Amended) A siren according to Claim 19 wherein a vehicle includes an ignition switchable between ON and OFF positions; and wherein said siren is operable responsive to the

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ignition being in the OFF position and is not operable responsive to the ignition being in the ON position.

21. A siren according to Claim 19 wherein said shock detecting circuit generates a first output based upon detecting a shock within a first intensity range, and generates a second output based upon detecting a shock within a second intensity range.

22. A siren according to Claim 21 wherein the first intensity range is less than the second intensity range; and wherein the first output causes a reduced siren security alarm and the second output causes a full siren security alarm.

23. A siren according to Claim 19 wherein said E/M transducer comprises a loudspeaker.

24. A siren according to Claim 19 wherein said housing is for mounting within a vehicle engine compartment.

25. A method for providing vehicle security comprising:

connecting a siren in the vehicle, the siren comprising a housing, a siren electrical signal generator circuit carried by the housing, a shock detector circuit carried by the housing, and an electrical/mechanical (E/M) transducer carried by the housing;

generating an electrical siren security alarm signal using the siren electrical signal generator circuit and sounding a siren security alarm responsive thereto using the E/M transducer; and

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generating the electrical shock sense signal responsive to mechanical shock using the E/M transducer and processing the electrical shock sense signal using the shock detector circuit.

26. A method according to Claim 25 wherein the vehicle includes an ignition switchable between ON and OFF positions; and further comprising operating the siren responsive to the ignition being in the OFF position and not operating the siren responsive to the ignition being in the ON position.

27. A method according to Claim 25 further comprising using the shock detecting circuit to generate a first output based detecting a shock within a first intensity range, and to generate a second output based upon detecting a shock within a second intensity range.

28. A method according to Claim 27 wherein the first intensity range is less than the second intensity range; and further comprising generating a reduced siren security alarm responsive to the first output, and generating a full siren security alarm responsive to the second output.

29. A method according to Claim 25 wherein the E/M transducer comprises a loudspeaker.

30. A method according to Claim 25 wherein connecting the siren in the vehicle comprises positioning the housing within a vehicle engine compartment.

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APPENDIX OF CITED AUTHORITIES

FOR U.S. PATENT APPLICATION SERIAL NO. 09/650,425

1. *In re Arne V. Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965).
(attached)



LEXSEE 340 f2d 965

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IN RE ARNE V. LARSON, LEVERET C. RUSSLEY AND WALDEMAR J.
MELDAHL

No. 7282

United States Court of Customs and Patent Appeals

52 C.C.P.A. 930; 340 F.2d 965; 1965 CCPA LEXIS 501; 144 U.S.P.Q. (BNA) 347

Oral argument December 10, 1964

February 4, 1965

COPY OF PAPERS
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PRIOR HISTORY:

[**1]

APPEAL from Patent Office, Serial No. 737,656

DISPOSITION:

Affirmed.

CASE SUMMARY

PROCEDURAL POSTURE: Appellants sought review of an order of the United States Patent Office Board of Appeals affirming the rejection of certain of appellants' patent claims for mobile tanks suitable for transportation of liquids.

OVERVIEW: Appellants filed a patent application for mobile tanks for the transportation of liquids. Certain claims of appellants' patent application were rejected after prior art was reviewed. On appeal, the court held the claims did not distinguish prior art and were obvious since they were suggested by prior art.

OUTCOME: Order affirming rejection of certain of appellants' patent claims affirmed because the claims did not distinguish prior art, and were obvious since they were suggested by prior art.

COUNSEL:

Allan B. Wheeler, Wheeler & Wheeler, for appellants.

Clarence W. Moore (L. F. Parker, of counsel) for the Commissioner of Patents.

OPINION BY:

ALMOND

OPINION:

[*930] Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and ALMOND, Jr., Associate Judges

ALMOND, Judge, delivered the opinion of the court:

This is an appeal from the decision of the Patent Office Board of Appeals affirming a rejection of claim 12, and the examiner's refusal to allow claims 15 and 16, which were substituted for finally rejected claims 1 and 6. Eight claims were allowed.

Appellants' application n1 relates to a mobile fluid carrier unit and a vehicle assembly thereof.

n1 Serial No. 737,656, filed May 26, 1958.

Claims 12 and 15 are illustrative:

12. In a vehicle, a wheel hub having annular rim flanges, each flange having an annular clamping seat, a flexible-walled casing having beads engaged with the respective seats, clamping means fastened to the respective rim flanges in clamping engagement with said beads to hold said beads to said seats to form a fluidtight fluid cargo enclosure bounded by said wheel hub and

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[**2] said flexible-walled casing, and frictional brake means, said means including a brake drum integral [**931] with a said clamping means, whereby to transmit heat from the brake drum to said wheel hub for transmission to a fluid cargo disposed within said fluid-tight enclosure.

15. A transport unit having a relatively light frame, said frame consisting only of a longitudinally extending relatively light central frame element and a relatively light tubular transverse axle attached to said central frame element, a pair of relatively light wheel hubs mounted on said axle, and a pair of flexible-walled carrier casings, a said carrier casing being disposed about said axle directly adjacent to each side of said central frame element, said wheel hubs being sealed to said carrier casings to enclose the entire cargo space of said unit.

Further illustrative of the claimed invention, Figs. 3 and 4 of the drawings are reproduced below.

[Graphic omitted. See illustration in original.]

The three main features of the fluid carrier portrayed in the drawings are:

(1) A flexible walled wheel 35 in which the fluid is carried.

(2) A towbar 5 and hollow axle 25.

(3) A frictional [**3] brake comprising brake shoe 60 and brake drum 44.

[**932] Each unit of the assembly comprises a sectional towbar 5, which is centrally affixed to an axle 25. The opposite ends of the towbar are provided with coupling means 15, 23 which serve to connect with like couplings on other identical units to provide a vehicle of several units. A pair of flexible-walled rolling tanks 35 which serve as wheels are mounted on the ends of the axles. Each tank or wheel has a hub portion which includes a tubular member 36 through which the axle extends and annular members 40, 48 at the respective inner and outer ends of the tubular member 36 spaced to support the rim flanges of flexible casing 35 which is clamped thereon by means of rings 45 and 57. Clamp ring 45 carries the rotatable brake drum 44 engagable by a nonrotary brake shoe 60 operated by fluid pressure cylinder 61. Application of fluid to cylinder 61 exerts braking pressure to brake drum 44 which serves to decelerate each wheel 35. Inside each casing is a discharge hose 65 through which the casing may be filled or drained. A second hose 75 serves as a vent pipe. The brake drum 44 is integral with each inboard clamping ring [**4] 45. references relied on below are:

Le Clair et al. (British), 573,726, December 4, 1945.

Arpin, 2,548,190, April 10, 1951.

Albee, 2,952,468, September 13, 1960.

Tuttle et al., 2,974,970, March 14, 1961.

Like appellants' combination, Le Clair et al., discloses mobile tanks suitable for the transportation of liquids. The specification and drawings disclose a pair of tank wheels rotatably mounted on a transverse axle with a towbar centrally attached to the axle. The towbar has rear and front coupling means for disengagably attaching units. The hollow wheels of Le Clair et al. are formed of two dish-shaped inflexible shells welded to the inside of a T-ring encircled by a steel band. The wheels are mounted on an axle fixed in an axle tube. The specification states that "if so desired, each of the tank-wheels may be provided with an over run brake assembly * * *."

Both Arpin and Albee show the use of a hollow wheel-like flexible body mounted on an axle as a mobile fuel carrier. The Arpin patent states that his "tank is provided with a central axle which does not rotate with the tank, the reservoir revolving thereabout pursuant to ground friction when the axle is pulled [**5] as during towing." It is also stated that the axle is hollow. The Arpin drawings show that the flexible body is filled with fluid under pressure through one end of the hollow axle and that the tank is vented through the other end of the axle with a vertical pipe communicating with the axle to control the venting of air. Both Arpin and Albee show a tubular towbar and a frame affixed to the axle for towing the carrier.

[**933] Tuttle et al. discloses a fluid transporting vehicle having disc brakes rather than drum brakes as claimed by appellant. The Tuttle vehicle has one flexible-walled, cylindrical, fluid-carrying wheel. A hollow axle extends through the wheel and is connected to the frame of the vehicle at its ends. Brake discs are provided on a sleeve which is mounted on the axle between the wheel hub and the end of the axle. The sleeve is attached to a casing clamp on the wheel hub by bolts. The brake disc and hydraulically actuated brake pads are spaced away from the wheel hub by the sleeve.

The appealed claims were considered individually by the examiner and the board and were rejected on independent grounds.

Claim 12 was rejected as unpatentable over Tuttle [**6] et al. The board regarded the brake disc of Tuttle et al. as the equivalent of a brake drum and considered the disc to be integral with the clamping means for the bead of the flexible casing.

Claim 12 calls for: (1) "a wheel hub having annular rim flanges, each flange having an annular clamping

seat"; (2) "a flexible-walled casing having beads engaged with the respective seats"; (3) "clamping means fastened to *** the rim flanges" to hold the beads to "form a fluid-tight fluid cargo enclosure"; (4) "frictional brake means" and (5) "a brake drum integral with a said clamping means."

Limitations (1), (2), (3) and (4) are clearly met by Tuttle et al. As to limitation (5) instead of a brake drum integral with the clamping means, Tuttle et al. show a brake disc rigidly secured to the clamping means. In this connection the board stated:

The essential difference between the Tuttle et al. construction and that of claim 12 is the manner of connecting the brake disc or drum to the wheel hub. While the term "integral" is not limited to a fabrication of the parts from a single piece of metal, but is inclusive of other means for maintaining the parts fixed together as a single unit [**7] * * *.

[1] While the brake disc and clamp of Tuttle et al. comprise several parts, they are rigidly secured together as a single unit. The constituent parts are so combined as to constitute a unitary whole.

Webster's New International Dictionary (Second Edition) defines "integral" as "(2) Composed of constituent parts making a whole; composite; integrated."

We are inclined to agree with the board's construction of the term "integral" as used in claim 12. Then, too, we are inclined to agree with the position of the solicitor that the use of a one piece construction instead of the structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice. *In re Fridolph*, 50 CCPA 745, 309 F.2d 509, 135 USPQ 319.

[2] Claim 12 includes a functional statement relating to the conveyance of heat from the brake drum to the hub of the wheel for [*934] transmission to the fluid cargo. This statement is predicated on appellants' "brake drum integral" with the clamping means. The board reasoned that:

*** this feature does not contribute to a better heat transfer in appellants' construction because the heat dissipated by the brake drum must still cross [**8] the joint between the clamping ring and the hub since the clamping ring is otherwise insulated from the cargo fluid by the flexible tire casing material positioned between the clamp and the hub. No difference in structure has been pointed out that would afford an unobvious improved heat transfer from the brake to the cargo fluid.

We agree with the board that the claim defines no structure not shown by Tuttle et al. which would afford an unobvious heat transmission and therefore does not

distinguish over the applied reference. *In re Mason*, 44 CCPA 937, 244 F.2d 733, 114 USPQ 127.

As correctly analyzed by the solicitor, claim 15 is drawn to a transportation unit which includes:

1. a longitudinally extending light frame
2. a relatively light tubular transverse axle attached to the frame
3. a pair of relatively light wheel hubs mounted on the axle, and
4. a pair of flexible walled carrier casings disposed about the axle and sealed to the hub.

The board sustained the examiner's rejection of claim 15 as unpatentable over Le Clair et al. in view of either Arpin or Albee. The examiner considered it obvious to replace the rigid cargo containing wheels of Le Clair et al. [**9] with the flexible-casing cargo-containing wheels of Arpin and Albee.

The board pointed out that the claim requires the frame to consist only of a central frame and a tubular transverse axle; that Le Clair et al. disclose such a frame and axle responding fully to the structure as claimed except for added features for increasing cargo capacity such as containers for housing various articles in addition to liquid cargo carried in the hollow wheels. We agree with the board that it would be obvious to dispense with the added cargo handling features of Le Clair et al. and use the frame without those features. The board reasoned that if a hollow axle without more has the potential for use as a liquid transfer in appellants' vehicle, "it likewise must have that same potential in the Le Clair et al. vehicle since we find no claimed difference in structure over the reference."

The use of flexible casings for the cargo wheels of Le Clair et al. would be obvious in view of the teachings of either Arpin or Albee, who both teach the use of tank-type flexible-walled containers for liquid cargo carrier wheels. The apparent advantages and adaptable uses for such structures would afford ample [**10] reason to a skilled designer to adapt them to the Le Clair et al. vehicle.

[*935] Claim 16 adds to claim 15 frictional brake means defined in claim 12. As previously noted, Tuttle et al. disclosed a brake disc rigidly connected to a bead clamping means. With reference to claim 16 the board stated that it:

*** calls for both the brake construction of claim 12 and the frame construction of claim 15 and is unpatentable over the references as applied by the Examiner for the reasons set out *** in our consideration of claims 12 and 15. Both the frame feature and the

brake feature present to the vehicle combination only those advantages and results which are separately present individually in the prior art and this renders the combination of the two features obvious and routine.

The Le Clair et al. disclosure affords explicit suggestion for combining these features. The patent states:

If so desired, each of the tank wheels may be provided with *** [a] brake assembly * * *. Such brake mechanism may be of known construction and may be arranged to operate brake bands applied *** to a ring fitted to the inner or outer face of the tank-wheel.

Appellants argue [**11] that the board's holding that Le Clair et al. show the claimed structure is incorrect. They point out that the reference shows a great deal of additional framework, that it shows two axles, each solid.

[3] The added structure shown in the Le Clair et al. patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional feature is not desired, it would seem a matter of obvious choice to

eliminate it and the function it serves. *In re Listen*, 30 CCPA 1223, 136 F.2d 719, 58 USPQ 481.

The assertion that the Le Clair et al. patent is limited to two axles overlooks the fact that it specifically states the axle assembly may comprise "either a single axle or two axles fixed in an axle tube * * *." While the axle is said to be solid, the use of a tubular axle is suggested by Arpin who shows a tubular axle connected directly to a towbar.

Appellants assert that there is "no reference which shows a trailer having two flexible-walled cargo carrying casings." The Tuttle et al. disclosure refutes that assertion since it clearly shows a trailer having two flexible-walled cargo-carrying casings in tandem relation. Aside from the flexible feature, Le [**12] Clair et al. shows such a structure with the casings in side-by-side relation.

Upon consideration of the record before us and the arguments of counsel, we are of the opinion that appellants' claimed improvements in mobile fluid carrier units are suggested by the references cited.

The decision of the board of affirmed.

LEXSEE 340 f2d 965

**IN RE ARNE V. LARSON, LEVERET C. RUSSLEY AND WALDEMAR J.
MELDAHL**

No. 7282

United States Court of Customs and Patent Appeals

52 C.C.P.A. 930; 340 F.2d 965; 1965 CCPA LEXIS 501; 144 U.S.P.Q. (BNA) 347

Oral argument December 10, 1964

February 4, 1965

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[1]**

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OPINION BY:

ALMOND

OPINION:

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ALMOND, Judge, delivered the opinion of the court:

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Claims 12 and 15 are illustrative:

12. In a vehicle, a wheel hub having annular rim flanges, each flange having an annular clamping seat, a flexible-walled casing having beads engaged with the respective seats, clamping means fastened to the respective rim flanges in clamping engagement with said beads to hold said beads to said seats to form a fluidtight fluid cargo enclosure bounded by said wheel hub and

[**2] said flexible-walled casing, and frictional brake means, said means including a brake drum integral [*931] with a said clamping means, whereby to transmit heat from the brake drum to said wheel hub for transmission to a fluid cargo disposed within said fluid-tight enclosure.

15. A transport unit having a relatively light frame, said frame consisting only of a longitudinally extending relatively light central frame element and a relatively light tubular transverse axle attached to said central frame element, a pair of relatively light wheel hubs mounted on said axle, and a pair of flexible-walled carrier casings, a said carrier casing being disposed about said axle directly adjacent to each side of said central frame element, said wheel hubs being sealed to said carrier casings to enclose the entire cargo space of said unit.

Further illustrative of the claimed invention, Figs. 3 and 4 of the drawings are reproduced below.

[Graphic omitted. See illustration in original.]

The three main features of the fluid carrier portrayed in the drawings are:

- (1) A flexible walled wheel 35 in which the fluid is carried.
- (2) A towbar 5 and hollow axle 25.
- (3) A frictional [*93] brake comprising brake shoe 60 and brake drum 44.

[*932] Each unit of the assembly comprises a sectional towbar 5, which is centrally affixed to an axle 25. The opposite ends of the towbar are provided with coupling means 15, 23 which serve to connect with like couplings on other identical units to provide a vehicle of several units. A pair of flexible-walled rolling tanks 35 which serve as wheels are mounted on the ends of the axles. Each tank or wheel has a hub portion which includes a tubular member 36 through which the axle extends and annular members 40, 48 at the respective inner and outer ends of the tubular member 36 spaced to support the rim flanges of flexible casing 35 which is clamped thereon by means of rings 45 and 57. Clamp ring 45 carries the rotatable brake drum 44 engagable by a nonrotary brake shoe 60 operated by fluid pressure cylinder 61. Application of fluid to cylinder 61 exerts braking pressure to brake drum 44 which serves to decelerate each wheel 35. Inside each casing is a discharge hose 65 through which the casing may be filled or drained. A second hose 75 serves as a vent pipe. The brake drum 44 is integral with each inboard clamping ring [*94] 45. references relied on below are:

Le Clair et al. (British), 573,726, December 4, 1945.

Arpin, 2,548,190, April 10, 1951.

Albee, 2,952,468, September 13, 1960.

Tuttle et al., 2,974,970, March 14, 1961.

Like appellants' combination, Le Clair et al., discloses mobile tanks suitable for the transportation of liquids. The specification and drawings disclose a pair of tank wheels rotatably mounted on a transverse axle with a towbar centrally attached to the axle. The towbar has rear and front coupling means for disengagably attaching units. The hollow wheels of Le Clair et al. are formed of two dish-shaped inflexible shells welded to the inside of a T-ring encircled by a steel band. The wheels are mounted on an axle fixed in an axle tube. The specification states that "if so desired, each of the tank-wheels may be provided with an over run brake assembly * * *."

Both Arpin and Albee show the use of a hollow wheel-like flexible body mounted on an axle as a mobile fuel carrier. The Arpin patent states that his "tank is provided with a central axle which does not rotate with the tank, the reservoir revolving thereabout pursuant to ground friction when the axle is pulled [*95] as during towing." It is also stated that the axle is hollow. The Arpin drawings show that the flexible body is filled with fluid under pressure through one end of the hollow axle and that the tank is vented through the other end of the axle with a vertical pipe communicating with the axle to control the venting of air. Both Arpin and Albee show a tubular towbar and a frame affixed to the axle for towing the carrier.

[*933] Tuttle et al. discloses a fluid transporting vehicle having disc brakes rather than drum brakes as claimed by appellant. The Tuttle vehicle has one flexible-walled, cylindrical, fluid-carrying wheel. A hollow axle extends through the wheel and is connected to the frame of the vehicle at its ends. Brake discs are provided on a sleeve which is mounted on the axle between the wheel hub and the end of the axle. The sleeve is attached to a casing clamp on the wheel hub by bolts. The brake disc and hydraulically actuated brake pads are spaced away from the wheel hub by the sleeve.

The appealed claims were considered individually by the examiner and the board and were rejected on independent grounds.

Claim 12 was rejected as unpatentable over Tuttle [*96] et al. The board regarded the brake disc of Tuttle et al. as the equivalent of a brake drum and considered the disc to be integral with the clamping means for the bead of the flexible casing.

Claim 12 calls for: (1) "a wheel hub having annular rim flanges, each flange having an annular clamping

seat"; (2) "a flexible-walled casing having beads engaged with the respective seats"; (3) "clamping means fastened to *** the rim flanges" to hold the beads to "form a fluid-tight fluid cargo enclosure"; (4) "frictional brake means" and (5) "a brake drum integral with a said clamping means."

Limitations (1), (2), (3) and (4) are clearly met by Tuttle et al. As to limitation (5) instead of a brake drum integral with the clamping means, Tuttle et al. show a brake disc rigidly secured to the clamping means. In this connection the board stated:

The essential difference between the Tuttle et al. construction and that of claim 12 is the manner of connecting the brake disc or drum to the wheel hub. While the term "integral" is not limited to a fabrication of the parts from a single piece of metal, but is inclusive of other means for maintaining the parts fixed together as a single unit [**7] * * *.

[1] While the brake disc and clamp of Tuttle et al. comprise several parts, they are rigidly secured together as a single unit. The constituent parts are so combined as to constitute a unitary whole.

Webster's New International Dictionary (Second Edition) defines "integral" as "(2) Composed of constituent parts making a whole; composite; integrated."

We are inclined to agree with the board's construction of the term "integral" as used in claim 12. Then, too, we are inclined to agree with the position of the solicitor that the use of a one piece construction instead of the structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice. *In re Fridolph*, 50 CCPA 745, 309 F.2d 509, 135 USPQ 319.

[2] Claim 12 includes a functional statement relating to the conveyance of heat from the brake drum to the hub of the wheel for [*934] transmission to the fluid cargo. This statement is predicated on appellants' "brake drum integral" with the clamping means. The board reasoned that:

*** this feature does not contribute to a better heat transfer in appellants' construction because the heat dissipated by the brake drum must still cross [**8] the joint between the clamping ring and the hub since the clamping ring is otherwise insulated from the cargo fluid by the flexible tire casing material positioned between the clamp and the hub. No difference in structure has been pointed out that would afford an unobvious improved heat transfer from the brake to the cargo fluid.

We agree with the board that the claim defines no structure not shown by Tuttle et al. which would afford an unobvious heat transmission and therefore does not

distinguish over the applied reference. *In re Mason*, 44 CCPA 937, 244 F.2d 733, 114 USPQ 127.

As correctly analyzed by the solicitor, claim 15 is drawn to a transportation unit which includes:

1. a longitudinally extending light frame
2. a relatively light tubular transverse axle attached to the frame
3. a pair of relatively light wheel hubs mounted on the axle, and
4. a pair of flexible walled carrier casings disposed about the axle and sealed to the hub.

The board sustained the examiner's rejection of claim 15 as unpatentable over Le Clair et al. in view of either Arpin or Albee. The examiner considered it obvious to replace the rigid cargo containing wheels of Le Clair et al. [**9] with the flexible-casing cargo-containing wheels of Arpin and Albee.

The board pointed out that the claim requires the frame to consist only of a central frame and a tubular transverse axle; that Le Clair et al. disclose such a frame and axle responding fully to the structure as claimed except for added features for increasing cargo capacity such as containers for housing various articles in addition to liquid cargo carried in the hollow wheels. We agree with the board that it would be obvious to dispense with the added cargo handling features of Le Clair et al. and use the frame without those features. The board reasoned that if a hollow axle without more has the potential for use as a liquid transfer in appellants' vehicle, "it likewise must have that same potential in the Le Clair et al. vehicle since we find no claimed difference in structure over the reference."

The use of flexible casings for the cargo wheels of Le Clair et al. would be obvious in view of the teachings of either Arpin or Albee, who both teach the use of tank-type flexible-walled containers for liquid cargo carrier wheels. The apparent advantages and adaptable uses for such structures would afford ample [**10] reason to a skilled designer to adapt them to the Le Clair et al. vehicle.

[*935] Claim 16 adds to claim 15 frictional brake means defined in claim 12. As previously noted, Tuttle et al. disclosed a brake disc rigidly connected to a bead clamping means. With reference to claim 16 the board stated that it:

*** calls for both the brake construction of claim 12 and the frame construction of claim 15 and is unpatentable over the references as applied by the Examiner for the reasons set out *** in our consideration of claims 12 and 15. Both the frame feature and the

brake feature present to the vehicle combination only those advantages and results which are separately present individually in the prior art and this renders the combination of the two features obvious and routine.

The Le Clair et al. disclosure affords explicit suggestion for combining these features. The patent states:

If so desired, each of the tank wheels may be provided with *** [a] brake assembly * * *. Such brake mechanism may be of known construction and may be arranged to operate brake bands applied *** to a ring fitted to the inner or outer face of the tank-wheel.

Appellants argue [**11] that the board's holding that Le Clair et al. show the claimed structure is incorrect. They point out that the reference shows a great deal of additional framework, that it shows two axles, each solid.

[3] The added structure shown in the Le Clair et al. patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional feature is not desired, it would seem a matter of obvious choice to

eliminate it and the function it serves. *In re Listen*, 30 CCPA 1223, 136 F.2d 719, 58 USPQ 481.

The assertion that the Le Clair et al. patent is limited to two axles overlooks the fact that it specifically states the axle assembly may comprise "either a single axle or two axles fixed in an axle tube * * *." While the axle is said to be solid, the use of a tubular axle is suggested by Arpin who shows a tubular axle connected directly to a towbar.

Appellants assert that there is "no reference which shows a trailer having two flexible-walled cargo carrying casings." The Tuttle et al. disclosure refutes that assertion since it clearly shows a trailer having two flexible-walled cargo-carrying casings in tandem relation. Aside from the flexible feature, Le [**12] Clair et al. shows such a structure with the casings in side-by-side relation.

Upon consideration of the record before us and the arguments of counsel, we are of the opinion that appellants' claimed improvements in mobile fluid carrier units are suggested by the references cited.

The decision of the board of affirmed.

LEXSEE 340 f2d 965

IN RE ARNE V. LARSON, LEVERET C. RUSSLEY AND WALDEMAR J.
MELDAHL

No. 7282

United States Court of Customs and Patent Appeals

52 C.C.P.A. 930; 340 F.2d 965; 1965 CCPA LEXIS 501; 144 U.S.P.Q. (BNA) 347

Oral argument December 10, 1964

February 4, 1965

PRIOR HISTORY:

[**1]

APPEAL from Patent Office, Serial No. 737,656

DISPOSITION:

Affirmed.

CASE SUMMARY

PROCEDURAL POSTURE: Appellants sought review of an order of the United States Patent Office Board of Appeals affirming the rejection of certain of appellants' patent claims for mobile tanks suitable for transportation of liquids.

OVERVIEW: Appellants filed a patent application for mobile tanks for the transportation of liquids. Certain claims of appellants' patent application were rejected after prior art was reviewed. On appeal, the court held the claims did not distinguish prior art and were obvious since they were suggested by prior art.

OUTCOME: Order affirming rejection of certain of appellants' patent claims affirmed because the claims did not distinguish prior art, and were obvious since they were suggested by prior art.

COUNSEL:

Allan B. Wheeler, Wheeler & Wheeler, for appellants.

Clarence W. Moore (L. F. Parker, of counsel) for the Commissioner of Patents.

OPINION BY:

ALMOND

OPINION:

[*930] Before WORLEY, Chief Judge, and RICH, MARTIN, SMITH, and ALMOND, Jr., Associate Judges

ALMOND, Judge, delivered the opinion of the court:

This is an appeal from the decision of the Patent Office Board of Appeals affirming a rejection of claim 12, and the examiner's refusal to allow claims 15 and 16, which were substituted for finally rejected claims 1 and 6. Eight claims were allowed.

Appellants' application n1 relates to a mobile fluid carrier unit and a vehicle assembly thereof.

n1 Serial No. 737,656, filed May 26, 1958.

Claims 12 and 15 are illustrative:

12. In a vehicle, a wheel hub having annular rim flanges, each flange having an annular clamping seat, a flexible-walled casing having beads engaged with the respective seats, clamping means fastened to the respective rim flanges in clamping engagement with said beads to hold said beads to said seats to form a fluidtight fluid cargo enclosure bounded by said wheel hub and

[**2] said flexible-walled casing, and frictional brake means, said means including a brake drum integral [*931] with a said clamping means, whereby to transmit heat from the brake drum to said wheel hub for transmission to a fluid cargo disposed within said fluid-tight enclosure.

15. A transport unit having a relatively light frame, said frame consisting only of a longitudinally extending relatively light central frame element and a relatively light tubular transverse axle attached to said central frame element, a pair of relatively light wheel hubs mounted on said axle, and a pair of flexible-walled carrier casings, a said carrier casing being disposed about said axle directly adjacent to each side of said central frame element, said wheel hubs being sealed to said carrier casings to enclose the entire cargo space of said unit.

Further illustrative of the claimed invention, Figs. 3 and 4 of the drawings are reproduced below.

[Graphic omitted. See illustration in original.]

The three main features of the fluid carrier portrayed in the drawings are:

- (1) A flexible walled wheel 35 in which the fluid is carried.
- (2) A towbar 5 and hollow axle 25.
- (3) A frictional [**3] brake comprising brake shoe 60 and brake drum 44.

[*932] Each unit of the assembly comprises a sectional towbar 5, which is centrally affixed to an axle 25. The opposite ends of the towbar are provided with coupling means 15, 23 which serve to connect with like couplings on other identical units to provide a vehicle of several units. A pair of flexible-walled rolling tanks 35 which serve as wheels are mounted on the ends of the axles. Each tank or wheel has a hub portion which includes a tubular member 36 through which the axle extends and annular members 40, 48 at the respective inner and outer ends of the tubular member 36 spaced to support the rim flanges of flexible casing 35 which is clamped thereon by means of rings 45 and 57. Clamp ring 45 carries the rotatable brake drum 44 engagable by a nonrotary brake shoe 60 operated by fluid pressure cylinder 61. Application of fluid to cylinder 61 exerts braking pressure to brake drum 44 which serves to decelerate each wheel 35. Inside each casing is a discharge hose 65 through which the casing may be filled or drained. A second hose 75 serves as a vent pipe. The brake drum 44 is integral with each inboard clamping ring [**4] 45. references relied on below are:

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Both Arpin and Albee show the use of a hollow wheel-like flexible body mounted on an axle as a mobile fuel carrier. The Arpin patent states that his "tank is provided with a central axle which does not rotate with the tank, the reservoir revolving thereabout pursuant to ground friction when the axle is pulled [**5] as during towing." It is also stated that the axle is hollow. The Arpin drawings show that the flexible body is filled with fluid under pressure through one end of the hollow axle and that the tank is vented through the other end of the axle with a vertical pipe communicating with the axle to control the venting of air. Both Arpin and Albee show a tubular towbar and a frame affixed to the axle for towing the carrier.

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The appealed claims were considered individually by the examiner and the board and were rejected on independent grounds.

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The essential difference between the Tuttle et al. construction and that of claim 12 is the manner of connecting the brake disc or drum to the wheel hub. While the term "integral" is not limited to a fabrication of the parts from a single piece of metal, but is inclusive of other means for maintaining the parts fixed together as a single unit [**7] * * *.

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*** this feature does not contribute to a better heat transfer in appellants' construction because the heat dissipated by the brake drum must still cross [**8] the joint between the clamping ring and the hub since the clamping ring is otherwise insulated from the cargo fluid by the flexible tire casing material positioned between the clamp and the hub. No difference in structure has been pointed out that would afford an unobvious improved heat transfer from the brake to the cargo fluid.

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The board pointed out that the claim requires the frame to consist only of a central frame and a tubular transverse axle; that Le Clair et al. disclose such a frame and axle responding fully to the structure as claimed except for added features for increasing cargo capacity such as containers for housing various articles in addition to liquid cargo carried in the hollow wheels. We agree with the board that it would be obvious to dispense with the added cargo handling features of Le Clair et al. and use the frame without those features. The board reasoned that if a hollow axle without more has the potential for use as a liquid transfer in appellants' vehicle, "it likewise must have that same potential in the Le Clair et al. vehicle since we find no claimed difference in structure over the reference."

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[*935] Claim 16 adds to claim 15 frictional brake means defined in claim 12. As previously noted, Tuttle et al. disclosed a brake disc rigidly connected to a bead clamping means. With reference to claim 16 the board stated that it:

*** calls for both the brake construction of claim 12 and the frame construction of claim 15 and is unpatentable over the references as applied by the Examiner for the reasons set out *** in our consideration of claims 12 and 15. Both the frame feature and the

brake feature present to the vehicle combination only those advantages and results which are separately present individually in the prior art and this renders the combination of the two features obvious and routine.

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Appellants argue [**11] that the board's holding that Le Clair et al. show the claimed structure is incorrect. They point out that the reference shows a great deal of additional framework, that it shows two axles, each solid.

[3] The added structure shown in the Le Clair et al. patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional feature is not desired, it would seem a matter of obvious choice to

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Appellants assert that there is "no reference which shows a trailer having two flexible-walled cargo carrying casings." The Tuttle et al. disclosure refutes that assertion since it clearly shows a trailer having two flexible-walled cargo-carrying casings in tandem relation. Aside from the flexible feature, Le [**12] Clair et al. shows such a structure with the casings in side-by-side relation.

Upon consideration of the record before us and the arguments of counsel, we are of the opinion that appellants' claimed improvements in mobile fluid carrier units are suggested by the references cited.

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